

REMARKS

The above amendments are submitted within the three-month period for response for the Final Office Action mailed January 11, 2007, and in connection with a Request for Continued Examination (RCE). Authorization to charge the \$790.00 requisite fee is hereby included in the Electronic Fee Sheet attached. Reconsideration and allowance of all pending claims are respectfully requested.

In the subject Office Action, claims 1,3-4, 7-8, 10 and 12 were rejected under 35 U.S.C. § 101. Additionally, claims 1, 3-8, 10-16 and 18-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the article "Efficient Mid-Query Re-Optimization of Sub-Optimal Query Execution Plans" by Kabra et al (Kabra) in view of U.S. Patent No. 6,092,099 to Irie et al.

Applicants respectfully traverse the Examiner's rejections to the extent that they are maintained. Applicants have amended claims 1, 7, 12-13 and 15-16, and Applicants respectfully submit that no new matter is being added by the above amendments, as the amendments are fully supported in the specification, drawings and claims as originally filed.

As an initial matter, Applicants thank the Examiner for the consideration granted in the telephonic interview conducted on March 8, 2007. In the interview, Applicants proposed amendments to address the Examiner's §101 and §103 rejections. With regard to the §101 rejections, Applicants proposed amending claims 1, 7 and 12 to clarify that the execution of a query access plan is for the purpose of generating at least a portion of a result set for storage or display. In addition, with respect to the §103 rejections, Applicants proposed amending the independent claims to clarify the role of a query optimizer in the generation of a query access plan. The Examiner, in turn, indicated that the proposed amendments would likely overcome the current rejections, but that an additional search would be required prior to allowing the application.

The above amendments are consistent with the amendments proposed in the interview. In particular, with respect to the §101 rejections, claims 1, 7 and 12 have been amended as outlined above, and now recite subject matter that is consistent with the

Office's current guidelines on statutory subject matter. Withdrawal of the §101 rejections is therefore respectfully requested.

With respect to the §103 rejections, Applicants have amended all independent claims (claims 1, 7, 12, 13, 15 and 16) to clarify that (1) the query access plan is of the type generated by a query optimizer, and (2) the query access plan is rebuilt with the query optimizer. Support for these amendments may be found, for example, at page 8, lines 11-13 and page 10, lines 12-22 of the Application as filed.

As Applicants discussed in the interview, one aspect of Applicants' invention is the ability to address errors that occur during execution of a query access plan by, in part, rebuilding the query access plan. As Applicants also discussed, however, a "query access plan" is understood in the art to be the output of a query optimizer, which is executable by a database engine. The aforementioned amendments therefore clarify the nature of a query access plan as being generated by a query optimizer.

The references cited by the Examiner, Kabra and Irie, do not disclose or suggest handling execution errors of the type that halt the execution of a query access plan, where that query access plan is of the type that is generated by a query optimizer, nor do the references disclose rebuilding a query access plan with a query optimizer in connection with receiving or detecting an error. As has been acknowledged by the Examiner, Kabra does not disclose handling errors in the nature of execution errors that cause the execution of a query or query access plan to be halted. The detection of a sub-optimal query, as occurs in Kabra, perhaps results in a query being modified or re-optimized, but the decision to perform such a modification or optimization is made by the optimizer, and is more or less a voluntary operation performed on the basis of collected performance statistics. Execution errors that halt execution of a query, on the other hand, are involuntary operations that essentially terminate a query and prohibit its continued execution.

Irie discloses errors that the Examiner analogizes to execution errors; however, it is important to note that the "plan" in Irie relates to the execution of an agent, and not to a query access plan generated by a query optimizer. As disclosed at col. 9, lines 49-67 of Irie, a "plan" is a script that is used to control the movement of an agent between one or

more nodes, submit requests to databases on those nodes, and compile the results. The plan, however, is external to any database management system. As disclosed at col. 9, lines 7-19, and shown in Fig. 6, for example, the plan is coded in Java or another interpreted language, and executed by an interpreter on a node to access a database management system through JDBC, store results, and move the agent to another node. The plan itself is not generated by any query optimizer, and is not executed directly by a database engine to implement a query. At the most, a plan includes high level query statements that are converted to a local ontology for a database from a global ontology during the generation of the plan by a plan generator.

Irie is otherwise silent regarding "query access plans" that are of the type generated by query optimizers, and the discussion of errors and re-generating plans, at col. 10, lines 31-45 of Irie, is irrelevant to rebuilding query access plans. Databases are effectively "black boxed" in the reference, and as such, the reference provides no motivation to one of ordinary skill in the art to modify Kabra to handle execution errors within a database management system, and in particular, to do so by rebuilding a query access plan with a query optimizer. Given that all independent claims now clarify the nature of a query access plan as being that generated by a query optimizer, as well as the rebuilding of a query access plan with a query optimizer, Applicants respectfully submit that the combination of Kabra and Irie fails to establish a *prima facie* case of obviousness as to any of the independent claims. Reconsideration and allowance of all of independent claims 1, 7, 12, 13, 15 and 16, and of claims 3-6, 8, 10-11, 14, and 18-20 which depend therefrom, are therefore respectfully requested.

As a final matter, Applicants traverse the Examiner's rejections of the dependent claims based upon their dependency on the aforementioned independent claims. Nonetheless, Applicants do note that a number of these claims recite additional features that further distinguish these claims from the references cited by the Examiner.

For example, with respect to dependent claims 3 and 18, these claims recite that the execution error is a function check. Kabra, however, and in particular the cited disclosure at page 109, does not disclose a function check, which is recognized in the art as a type of error that halts execution in a database engine. Furthermore, Irie, which is

directed to errors that occur outside of a database management system, cannot be relied upon to disclose any type of error that is analogous to a function check. Reconsideration and allowance of claims 3 and 18 are therefore respectfully requested for this additional reason.

In summary, Applicants respectfully submit that all pending claims are novel and non-obvious over the prior art of record. Reconsideration and allowance of all pending claims are therefore respectfully requested. If the Examiner has any questions regarding the foregoing, or which might otherwise further this case onto allowance, the Examiner may contact the undersigned at (513) 241-2324. Moreover, if any other charges or credits are necessary to complete this communication, please apply them to Deposit Account 23-3000.

Respectfully submitted,

March 9, 2007
Date

/Scott A. Stinebruner/
Scott A. Stinebruner
Reg. No. 38,323
WOOD, HERRON & EVANS, L.L.P.
2700 Carew Tower
441 Vine Street
Cincinnati, Ohio 45202
Telephone: (513) 241-2324
Facsimile: (513) 241-6234